

Macroeconomic Environment and Capital Structure in Life and Non-life Insurance Sector of Pakistan

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Abstract

An optimal Capital Structure is the imperative decision for any business management to be taken for persistent growth and wealth maximization of the shareholders. The purpose of the study is to investigate firm level and macroeconomic factors of financing behaviors of insurance sector during the study period of 2001-2013. The sample of the study is selected through convenient sampling technique. Moreover, empirical data has been extracted from a number of website notably, State Bank of Pakistan and World Bank. Hausman test and Breusch, and Pagan Lagrange Multiplier test select Fixed Effect and Pooled Regression Model for the study. The findings of the study have revealed that Age, size and tangibility are positively and significantly associated to capital structure, while inflation is insignificant in fixed effect but significant and positively associated in pooled OLS model. GDP is insignificant while lending rate is negative and significantly associated to debt ratio in both estimation techniques. Use of firms fixed effect model also increases the illustrative power of the model signifying that individual firms' heterogeneity issues influential to the leverage. Hence, the relationship of the variables supports Pecking-Order theory and Trade-Off theory of Capital structure. It is recommended to management of insurance sector that mature and large firm could use heavy debt by taking advantage of tax shield.

Key words: *Capital Structure, Firm level, Macroeconomic Factors, Insurance Sector*

Introduction

The debate on Capital Structure has been unfolded since the Seminal Paper of Modigliani and Miller (1958), which is based on some unrealistic assumption for instance zero taxation and bankruptcy cost. The Capital Structure Decision is irrelevant to establish value of the firm. Afterward relaxation of assumptions Modigliani and Miller (1963), conclude that combination of debt and equity can affect value of the firm. Many research scholars as well as academic studies have greatly documented the importance of financing policies in managerial decision, which have direct influence on shareholders (Pandey, 2010). Moreover, other studies portray that firm can maximize shareholder wealth, by changing financing-mix and thereby achieving optimal level of Capital Structure. The Capital Structure has been defined as the set of financing mix, which composed of debentures, bonds, commercial papers, preferred stock, and equity

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capital. Therefore, management can make three core preferences by issuing equity security and using internal financing (retained earnings) as well as and issuing of debt securities. The aforementioned fundamental structure of ownership prevails- in every territory of the globe (La Porta, Lopez-de-Silanes and Shleifer, 1999). The decision of Capital Structure is fundamental for Insurance industry. Therefore, Capital Structure Management is prerequisite, if cost of capital has an impact on ownership structure .

The empirical research studies advocate a mounting concern in financial management practices among business ventures in emerging market in less developed countries. Wald (1999) elaborates the developed economies such as U.S., German and U.K and their value of different parameters of Capital Structure. He finds that the legal and institutional variation affects the selection of capital structure. This exit from the conventional center on developed economies is creditable because, it shows alteration in a number of factors such as institutional setups, micro and macroeconomic parameters influence “optimal” financing policy. Firms in the U.S and firms in emerging economies, such as Jordan, Pakistan and India have different dividend policies. Therefore, Institutional settings and financial market development influence corporate payout behaviors. Thus, the Capital Structure Decision becomes vital for the inclination of relative return, and for meeting needs of the diverse stake-holders as well as for value creation.. Faccio and Xu (2011) give evidence empirically that the ambiguous consequences can decline the personal income tax over the stated period. Debt would make eye-catching in the perceptive of taxable investors than equity due to the lower rate of tax. While, from the aspect of management tax advantage of fixed payment, such as interest decidability diminishes owing to less corporate income tax. Different studies and theories develop different results; and supporting various schools of thought. Some Researchers support optimal capital structures while other emphasis on value-creation and minimization of the cost. The understanding and implication of the prior research work and theories have mostly focused in developed nations, therefore this study investigates the main determinants of capital structure in insurance sector of Pakistan.

1.2 Statement of the Problem

The issue of how much proportion of debt and equity should be used to develop Capital Structure. The aforementioned matter is debatable and is significantly under investigation. The question arises, what type of determinants in Capital Structure Decision should consider that would maximize the wealth of shareholders. This query has brought a lot of arguments on the prevailing matter, which led to various theories and studies in the field of financial management such as Modigliani and Miller theory (1958, 1963), Trade off Model, Pecking Order Theory and Agency Cost Theory, etc. According to the Myers (1984), there is positive association between profitability and leverage. Moreover, Pecking agency cost

theory and Agency cost theory also presents negative relationship between debt and profitability stated by Jensen and Meckling (1976). On the other hand, Pecking order theory of Myers and Majluf (1984), find inverse relationship between debt ratio and profitability of the firm. Although, the presence of various theories of capital structure, researchers have not found the optimal capital structure and generally established theory. Firms are still in a dilemma, which factors should influence Capital Structure Decision; and how to choose an optimal capital structure. So, the identification of determinants of Capital Structure and identification of prevailing theories in insurance companies is the focal point of this research.

1.3 Objectives of the study

- 1.** To examine the impact of Financial Variables (e.g.; profitability, Age, Firm Size, Tangibility and Business Risk,) on Capital structure decision of Insurance Companies in Pakistan.
- 2.** To evaluate the influence of Economic variables (e.g.; Inflation rate, GDP growth rate and Lending rate) on Leverage Insurance Industry of Pakistan.
- 3.** To Evaluate which Capital Structure Theory is influential in Pakistani Insurance Industry

Literature Review

Theoretical Background

Modgalini Miller theory

Modigliani and Miller propose that composition of the capital structure has no relation with the market value of the firm; he replaces the traditional approach. Modigliani and Miller (M&M), the originator of the Capital Structure in his research Paper in (1958), he discusses “The Cost of Capital Corporate Finance and the Theory of Investment”. The ideal world would be – no tax charges, the expose of reliable information, the limits of borrowing do not influence the value of the firm.

Pecking order theory

The pecking order theory of Capital Structure presents by Donaldson (1961), his work entitled ‘Corporate Debt Policy,’ hence, the researcher concludes that top management gives first priority to raise funds from internal source leaving out the other sources such as external source.

Trade off theory

This theory investigates that a firm select how much leverage and how much equity fund to employ by balancing the cost and benefit of debt. The cost of debt may in the form of financial distress cost or bankruptcy cost, however the firm incline the portion of debt till it reaches to optimal level, where the tax benefit and cost of debt are counterbalance.

Agency Theory

Agency theory sheds light on the costs, which emerges due to divergence of interest between Agent and Principal; Agent is the manager and Principal is the owner of the firm. According to Jensen and Meckling (1976), Capital Structure is identified by Agency Cost, which composed of both costs, such as Cost of Debt (kd) and Cost of Equity (ke). The monitoring costs consist of predictable outcomes of the severance of ownership of a firm. If the proportion of ownership of the agent is less in number, then the management maximizes the share wealth of the shareholder. The diminishing of benefits for shareholders due to the differences of managerial decisions, so conflict arises between management and Principal.

Booth *et al.* (2001): this study demonstrates that those firms, which depict high profitability ratio, would result in low debt ratio. It further clearly shows that more tangible assets, upper the long-term debt ratio and smaller the TDR. Despite a great number of analytical works in the area of the determinants of Capital Structure, few studies have addressed the impact of stock market liquidity on leverage.

Shah and khan (2007), analyze none-financial firms for the study period of 1994-2002, by using pooled regression and fixed effect model for number of industries. In addition, tangibility and profitability is significant and positively related to leverage. The size is insignificant determinants of Leverage however, growth is negative and significantly associated to Capital Structure. Hence, tangibility supports trade-off theory and growth rate is consistent with Agency cost theory. On the other hand, profitability confirms pecking order theory of Capital Structure.

Huang & Ritter (2009), explore that US companies support their function with external equity in the condition when cost of equity is lower. Lipson & Mortal (2009) have conducted study about the association between Capital Structure and liquidity of US firms. Hence, the study establishes inverse relationship between borrowings and liquidity.

Frank & Goyal (2009), reveal that important determinants of leverage for publicly traded American firms during 1950-2003, are “market median industry leverage (+ effect on leverage), market-to-book assets ratio (–), tangibility (+), profits (–), log of assets (+), and expected inflation (+)”. Thus, the results in line

with some version of Trade-off theory of Capital Structure.. Beattie, Goodacre, & Thomson (2006), evaluate the ownership structure of listed firms in United kingdom by confirming Pecking Order and Trade-Off Theories.

Lipson and Mortal (2010), determine that companies using short term equity keep less debt as forecasted by trade-off model. Therefore, the decision of opting external funds gives confidence to raise equity rather than debt.

Ahmed *et al.* (2010), identify the effect of firm attributes on Capital Structure in life insurance companies of Pakistan. However, Leverage has been selected as dependent variable while, “size, growth, age, risk, tangibility of assets and liquidity” opted as independent variables in the study. The findings of the ordinary least square (OLS) regression model shows that liquidity, profitability, size and risk have negative but significantly linked with Debt ratio. In this way, this study is steady with Pecking Order and Trade-off Theory of Capital Structure. Hence, the Leverage has insignificantly associated with growth and tangibility of assets.

Ali (2011), scrutinizes Capital Structure of nonfinancial Pakistani firms from 2003 to 2008 by using fixed effect and pooled model. The estimation techniques show that profitability, tangibility, size, growth, dividend and inflation rate are significant coefficients for Capital Structure. Furthermore, tangibility, size, inflation rate, growth and dividend are positively related to debt. In contrast, inverse relationship is found between profitability and Capital Structure. Thus, the results are confirms pecking order theory, trade-off theory and market timing theory.

Rahman *et al.* (2014), explain financial factors in life insurance sector of Pakistan during the period of 2007-2013. The regression model identifies that liquidity of the firm, profitability, business risk, age of the firm and size are significant parameters of Capital Structure. Furthermore, liquidity, profitability and age are inverse but significantly associated to Leverage while, tangibility and growth are insignificant factors of the study Thus, business risk and size are positively related to ownership structure in life insurance sector of Pakistan.

Saddam (2014), evaluates firm’s specific and country specific of financing decision in insurance sector, for the study period of 2007 to 2014 in the environment of Ethiopia. In addition, random effect model shows that firm’s micro factors like business risk, size, age and inflation rate are positive and statistically significantly associated to Capital Structure. On the contrary, growth, profitability, liquidity, and macro

factors (i.e. GDP growth rate and interest rate) are insignificant determinants of Ethiopian insurance sector. Hence, the results are congruent with Pecking Order and Trade-Off Theory.

Memon *et al.* (2015), study the firm's level and macroeconomic determinants of ownership structure during the study period of 2001-2012, by selecting 143 non-financial firms in Pakistan. The pooled OLS and fixed effect model reveal that size of the firm, tangibility and profitability of the firm are significant determinants of debt ratio across unlike proxies and different estimation techniques. Furthermore, fixed effect model investigates that inflation rate and interest rates are significant factors on Capital Structure Decision. As a result, the prominent theories for the study are Pecking Order and Trade-Off Theory.

Research Methodology

Research methodology is a tool to provide models for empirical data". The financial data for this study has been obtained from the website of the State Bank of Pakistan, Insurance Books, and Annual Reports of the Insurance Companies. On the other hand, Economic data has been extracted from Economic Survey of Pakistan and World Bank during 1999 -2013. The population of this study encompasses all insurance companies that render their services in Pakistan. Currently, fifty life and non-life insurance companies have been working in Pakistan since its inceptions out of them only forty one companies have been taken as a convenient sample, because of the unavailability of the data defacement. Besides, the year of establishment of the firm has been considered in this study. On the other hand, some firms have not fallen into the category to cover the total time period, therefore the financial data of the 36 companies have been selected from 1999 to 2013 however, and three Companies financial data has been selected from 2005 to 2013. However, the financial data of two companies are selected from 2007 to 2013, including takaful companies. Thus, the length of time is less than two decades 1999 to 2013. Moreover, the number of firms in insurance industry is limited and Takaful industry has been introduced in Pakistan in 2006. Therefore, firms are grouped according to their age to increase the sample size of the study. On the other hand, those firms, which had not provided complete information to the State Bank of Pakistan-missing data during the aforementioned period-, have also been excluded in this study. The study aims to provide more prominent and updated outcomes. Therefore, the availability and consistence of data is necessary for Panel data model structure. Hence, forty one insurance companies have been used to investigate the impact of micro, macroeconomic variables on Capital Structure decision in insurance sector in Pakistan.

Model1(Fixed Effect Model)

$$LV_{it} = \beta_0 + \beta_1 age_{it} + \beta_2 size_{it} + \beta_3 tang_{it} + \beta_4 B.Rt + \beta_5 Inf_{it} + \beta_6 GDP_{it} + \beta_7 L.Rate + \epsilon_{it}.$$

Model-2(Pooled OLS)

$$LV_{it} = \beta_0 + \beta_1 age_{it} + \beta_2 size_{it} + \beta_3 tang_{it} + \beta_4 B.Rt + \beta_5 Inf_{it} + \beta_6 GDP_{it} + \beta_7 L.Rate + \epsilon_{it}.$$

LV = Firm Leverage

β_0 - Constant coefficient

$\beta_1 - \beta_7$ = Regression coefficients for measuring independent variables

Size = firm size

Age = age of the firm

Tang = tangibility of fixed asset

Br = business risk .

Inf = Inflation

GDP =Gross Domestic Product

L.Rat = Lending Rate

ϵ_i =Error term

Following (Booth *et al.*, 2001), (Shah & Khan, 2007), Ali (2011), Rahman and kakakhel (2016), Rahman (2017). this study is using panel data by considering both time series and cross section feature. In the field of Statistics or Econometrics, the data has the status of cross section as well as time series, which could refer as panel data. Hence, it is very common, because of massive source of information for the economists. The panel data can be recognized with different names such as ‘pool data, longitudinal data, micro panel data event history analysis and cohort analysis (Gujarati, 2003).

Table 1 Diagnostic Testing and Models Specification

Test normality Data	Shapiro-Wilk test	(P-value is greater than 0.05) shows that the distribution is normal.
Heteroskedasticity Test	Breusch-Pagan / Cook-Weisberg test	The result is found P-value is 0.5133, which is greater than 0.05, therefore, this model does not face any heteroskedasticity problem.
Testing for Multicollinearity	Variance Inflation Factor (VIF) and Tolerance (TOL)	Value of VIF is less than 10 and tolerance (1/TOL) is less than 1 indicates that the data is free of multicollinearity
Model Specification between Fixed effects and Random effects	Hausman specification test	The Hausman’s specification test presents significant results because the model has the value of $p=0.0000$ ($P<0.05$), then it is more suitable to employ fixed effects model instead of the random effects model

Model specification between Random effects and Pooled OLS	Breusch-Pagan LaGrange Multiplier (LM) test	The insignificant result (Prob>chi2=0.1441) conforms pooled regression model for the study
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Sources: Output of STATA and SPSS software for various tests.

The current study uses panel data, which encompass both cross-section and time series data. Panel data analysis is for the purpose of economic associations between the factors with the assistance of panel data models shaped by using cross-sectional data, which have a time dimension. Before executing regression model, it might be considered that there are four assumptions in undertaking the model one of them is normality test (Gujarati,1995).

The basic assumption of data analysis is normality, which is tested through Shapiro-Wilk test (see table, 1) and histogram also confirm that residuals are normally distributed around its mean of zero, it shape is like bell. Moreover, Hair et al. (2006) states that most suitable test for normality is Shapiro-Wilk test. As a result, the higher p-value ($P > 0.05$) shows significant result, which gives evidence that the distribution is normal. In addition, this model has not encompassed any heteroskedasticity problem because Breusch-Pagan / Cook-Weisberg test found that P-value is 0.5133. Which is insignificant, however correlation analysis also finds fairly small co-relation among variables.

Table-2 Pearson correlation

	Lev	Age	Size	Tang	BR	GDP	Inf.r	Int. r
Lev	1.0000							
Age	-0.0173	1.0000						
Size	0.6345	-0.2045	1.0000					
Tang	0.7134	-0.6258	-.00023	1.0000				
B.R	-0.4459	-0.0543	-0.0123	-0.0474	1.0000			
GDP	0.273	0.44234	-0.06573	0.0027	-0.04354	1.0000		
Inf ,r	0.0484	0.0247	0.02324	0.08442	0.07448	-0.0748	1.000	
Int. r	-0.563	-0.0147	0.31843	0.0283	-0.03487	0.0445	0.0783	1.000

Table 2 shows the correlation between dependent and independent variables. Moreover, the empirical results of Pearson Correlation Matrix reports no multicollinearity problem in the model because the values does not surpass the cut point i.e. 0.6. According to Asterious and Hall (2007) explain that numerous researchers conclude that correlation coefficient more than 0.9 can cause the problem of multicollinearity. According to the aforementioned researchers, there is correlation among variables but it does not exceed the value 0.9.

Table -3 Determinants of Capital Structure by using fixed effect model

Variables	Regression Model 1(Fixed effect Model)			
	Coefficient	Std. Err.	T	P. Value
Age	0.389543	0.094549	2.753	0.013**
Size	0.148783	0.049864	3.141	0.000*
Tangibility	0.174853	0.089752	3.786	0.000*
Business Risk	-0.11694	0.0794922	-2.435	0.000*
Inflation	0.004592	0.0385245	0.095	0.009
GDP	0.045830	0.0473485	0.006	0.542
Lending rate	-0.14948	-0.085473	-2.341	0.000*
Constant	0.11235	0.823456	2.137	0.012
Total Number of Groups			41	
Number of Observation			540	
Observation per Group:	Min. = 6	Max. = 15	Avg. = 13.2	
R-Squared			0.923	
Adjusted R			0.891	
F-Statistic			15.637	
Prob>F			0.000	

Table-4 Factors of Capital Structure by Using Pooled Regression Model

Variables	Regression Mode 2 (Leverage)			
	Coefficient	Std.Err.	T	P. Value
Age	0.12252	0.024549	5.75	0.000*

Size	0.23173	0.03174	8.14	0.012**
Tangibility	0.28485	0.039755	5.24	0.002**
Business Risk	-0.21546	0.054866	-4.77	0.000*
Inflation	0.08576	0.04875	2.546	0.000*
GDP	0.00558	0.05637	0.012	0.102
Interest Rate	-0.14494	0.08856	-6.34	0.001**
Constant	-0.18342	0.16574	-3.67	0.002
Number of Observation	540			
Number of variables	9			
R-Squared	0.571			
Adjusted R	0.552			

Sources: Stata software output of financial and Economic data from insurance companies of financial statement ,State Bank of Pakistan and World Bank during the period of (1999-2013).Note * significant at 1%, ** significant at 5

Results and Discussion

Age of the firm

❖ Pooled Regression Model

There is statistically significant and positive association between age of the firm and Capital Structure in the insurance industry of Pakistan (see table 4).

❖ Fixed effect Model

There is significant and direct relationship between age and Leverage of the insurance industry of Pakistan (see table 3)

The researcher concludes from the tables (4.3 and 4.4), that age is significantly and positively related to debt ratio, because when the firm gets mature the portion of debt also increases. The findings suggest that mature firms of insurance sector heavily rely on debt financing due to the stable nature. The long history firms raise funds from external source because the cost of debt for mature firm is considered as low. The earnings of such institution are high as compared to the younger firm. In addition, age of the firm is still considering the symbol of reputation, while making capital structure decision. As the age of the firm is increased, its operation and other expenses also increase, therefore debt burden also enhance. Firm behavior also influences ownership structure decision (Titman and Wessel's 1988). On the contrary, the

character of the firm also affects the financing behavior of the firm. The creditworthiness of applicants is observed, while banks make investment decisions. However, risky business is also evaluated because then the credit faces the music in bankruptcy situation. The positive and significant relationship is supported by Trade off theory. The current results is also consistent with the prior findings of Rahman *et al.* (2014) Saddam (2014), Memon *et al.* (2015),

Size

❖ Pooled Regression Model

There is a positive and statistically significant relationship between size and Leverage (see table 4).

❖ Fixed Effect Model

There is statistically significant and direct relationship between size and Capital Structure of the insurance industry of Pakistan (see table 3).

As the results of the tables, 4.3 and 4.4 present there is a positive and significant relationship between debt ratio and Capital Structure. Eriotis (2005), argues that larger firms having greater need of funds as compared to smaller one, because the former having large setup and branches therefore, these firms use high percentage of debt in mix of debt and equity. On the contrary, bankruptcy cost is connected with risk and it further based on the size of the firm. Smaller firm are more risky than larger firm is. The probability of firm stability is enhanced as the size of the firm enlarged, because larger firms are more diversified and having huge budget to survive. Moreover, firms relate from developing countries like Pakistan mostly depend on short term loans Booth *et al.* (2001). Hence, those firms which are composed of more debt as compared to equity are called high leveraged firms. Therefore, these decisions make the Pecking Order theory steadier. Furthermore, bankruptcy cost and financial distress cost would be minimal as the size of the firm diversifies. Moreover, Trade Off theory suggest that large firm borrow more, Conversely, Pecking order theory shows inverse association between sizes and leverage, because these firms could easily issue shares, having no concern with asymmetry information. Larger firm can easily access to financial market to make a transaction. The creditworthiness of larger firms are efficient as compared to smaller firm. Financial institution can release loans on lenient conditions and interest rates for larger firms. Thus, the chances of bankruptcy become void because financial institutions require lesser amount of collaterals. A lot of Literature supports the positive and significant association between leverage and size of the firms. Shah and khan (2007), finds negative relationship of capital structure and size of the

firm in non-financial firm. whereas. The results of current study is stand on line with the study of Ali (2011), Saddam (2014), Rahman *et al.* (2014), Memon *et al.* (2015),

Tangibility

❖ Pooled Model

There is negative and significant relationship between tangibility and leverage (see table 4)

❖ Fixed effect Model

There is positive and statistically significant relationship between tangibility and capital structure of insurance industry of Pakistan (see table 3).

The result of Fixed Effect and Pooled OLS show the relationship of tangibility and Capital Structure is found significant and positive. When tangibility of assets is increased it also inclined the leverage level of the insurance industry. Moreover, the tangible of assets enhance the debt percentage of the firm because management required huge fund for capital budgeting decision and it cannot be meet without borrowing. The top management is very careful while selecting such project, which requires huge financing. The weighted average cost of capital is also evaluated because rate of return should be fulfilled both fixed and variable cost. The consistent positive cash flow can give better results for the management because the top-management pays to all stakeholders and creates revenue for the firm. The prior studies provide empirical result, which has positive in association between debt and asset level. Therefore, firms having strong position in tangible assets would tend to raise greater portion of debt. On the other hand, those firms having greater portion of long term assets could borrow with lower rate of interest by providing securities. The previous studies give deviated outcomes about tangibility of assets and Capital Structure. However, inverse linkage has found between tangibility and leverage in Thailand (Booth *et al.*, 2001). According to the Pecking Order and Trade-Off Theories, the association of tangibility and Leverage is also significant and positive. Rahman *et al.* (2014), find insignificant relationship of debt ratio and tangibility in insurance sector. The current result is consistent with the findings of Shah and Khan (2007) Frank & Goyal (2009), Memon *et al.* (2015) and Rahman and Kakakhel (2016).

Business risk

❖ Pooled Model

There is inversely and significant association between business risk and leverage (see table 4)

❖ Fixed effect Model

There is negative and statistically significant relationship between debt and business risk (see table 3)

The researcher concludes from the above table of 4.3 and 4.4 that Business risk has significantly and inversely effect on Capital Structure Decision. This is earning volatility in the operation of business or inefficiency of the management practices. It is the proxy for the financial distress and firm have to pay the risk premium to stakeholders. Moreover, to minimize the cost of capital, the insurance companies use internal fund to fulfill overall cost of the firm. If the retain earnings are not too much to meet need of the firm then it goes for external source (Myer, 1977). This connection clarifies that earning volatility or business risks are negatively related. The greater bankruptcy and agency cost reflects less use of debt in the Book value of capital structure⁵. Inconsistent operating income enhances chance of default thus such firms are not heavily depending on external source. Both of the theories Pecking order theory and trade-off theory support this relationship support the negative association of debt ratio and business risk. These findings are also consistent with Ahmed *et al.* (2010), Rahman *et al.* (2014), Rahman and Kakakhel (2016) find significant and negative determinant of capital structure in Pakistani insurance sector.

Inflation rate

❖ Poled Model

There is a positive and significant association between debt and inflation rate in the study period of 1999-2013 (see table 4)

❖ Fixed Effect Model

There is a positive and statistically insignificant results between debt ratio and inflation rate (see table 3)

The researcher concludes from the table 4.3 and that there is positive and insignificant relationship of inflation and Leverage supported by Gurcharan (2010). On the other hand, table 4.4 depicts positive and significant association of inflation and Capital Structure. The high rate of inflation in Pakistan forces Insurance sector to raise more debt than equity finance for the operation. This finding is consistent with the Trade-Off Theory. Moreover, inclination of the inflation is positively relates to the leverage, therefore the high rate of inflation cause rise in cost and firms change the financing decision. Inflation has a strong relationship with leverage because in developing countries mostly debt is taken as short term (Booth *et al.* 2001). Hence, any variation in inflation may cause cost of the debt in countries such as Pakistan and other

developing countries. However, the relation has found significantly positive between inflation rate and Capital Structure. In Pakistan Ali (2011), Memon (2015) Rahman and Kakakhel(2016) find positive relationship of Capital structure and inflation rate.

GDP rate

❖ Pooled Model

There is Insignificant but positive relationship is found between GDP rate and debt ratio in the insurance industry of Pakistan (see table 4)

❖ Fixed Effect Model

There is also insignificant positive relationship between GDP rate and Leverage in the study (see table 3)

The researcher concludes from the result of Fixed Effect model, there is insignificant but positive association is found between debt ratio and GDP growth rate. However, Constant Coefficient Model shows that there is insignificant but positive relationship between GDP and debt ratio. The relationship of Fixed Effect is prominent because the Fixed Effect Model is best model to explain the Panel Data in this study. Memon (2015) in Pakistan also supports the same insignificant result of GDP and Capital structure. saddam (2014) also find insignificant influence in Ethopin insurance industry.

Interest rate

❖ Pooled Regression Model

There is negative and significant relationship between lending rate and capital structure of the insurance industry of Pakistan (see table 4)

❖ Fixed effect Model

There is negative and statistically significant association between interest rate and capital structure of the insurance industry of Pakistan (see table 3)

The researcher concludes that interest rate is significant and inversely related to Capital structure in both models (eg.; Fixed Effect and Constant Coefficient Model). The central bank offer lending rate for the commercial banks, which give different type of loans. . As the lending rate is determined with the interest rate of commercial banks, therefore this rate characterized a cost (Kd) that firms spend with withdrawal of leverage. According to Pecking order theory, there is no relationship that increase in lending rate would

reduce borrowing of funds (Frank and Goyal, 2004). In contrast; Trade-off theory presents a direct linkage between lending rate and debt level of a firm because increase in lending rate inclines cost of borrowings. The corporate sector also raised money from the financial institution therefore, if the interest rate is hiked then Board of director withdraw less borrowing. Furthermore, loans are become expensive because of high interest rate for firms however, low interest rate encourages insurance sector to raise money easily and cheaply. In most of the developing countries such as Pakistan, high inflation may diminish the cost of borrowing. Furthermore, decreases the value of Leverage, hence investors prefer to raise fund for long period. On the other side, incline in the rate of interest firm may continue to be financed by short-term debt, but they are reluctant to raise fund from long-term debt⁶. Thus, interest rate is inversely and significantly related to debt therefore, Pakistani firms do not prefer to use debt when lending rate is high in the economy. Saddam (2014), finds insignificant result while Memon *et al.* (2015), finds significant affect on Pakistani non –financial sector between debt ratio and lending rate.

Conclusions

Capital Structure Decision is one among three core theories like Pecking order and Trade off and agency cost theory in strategic financial Management. In this way, independent variables of this study have been selected on the bases of aforementioned theories as well as the findings of other previous studies. Moreover, empirical data has been extracted from a number of website notably, Audited Financial Statements, State Bank of Pakistan and World Bank. The study is designed to evaluate the determinants of firm-level factors (Age, Size tangibility, business risk) and macroeconomic factors (Inflation rate, GDP growth rate and interest rate) of Capital Structure in Pakistani Insurance Industry. The researcher uses stata software 12, for the empirical analysis. Therefore, Hausman test and Breusch, and Pagan Lagrange Multiplier test select Fixed Effect and Pooled Regression Model for the study. The findings of the study have revealed that Age, size and tangibility are positively and significantly associated to capital structure while inflation is insignificant in fixed effect but significant and positively associated in pooled OLS model. GDP is insignificant while lending rate is negative and significantly associated to debt ration in both estimation techniques. Use of firms fixed effect model also increases the illustrative power of the model signifying that individual firms' heterogeneity issues influential to the leverage. Hence, the relationship of the variables supports Pecking-Order theory and Trade-Off theory of Capital structure. Future studies should be considers other macroeconomic factors like Tax rate, interest rate, Corruption index, while for capital structure short term debt formula could also be used. Generalized Method of Moments (GMM) estimation technique could be used for the optimal capital structure in insurance sector.

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